

BRIEFER ARTICLES

MODIFIED SAFETY-RAZOR BLADE HOLDER FOR TEMPERATURE CONTROL

(WITH ONE FIGURE)

The apparatus devised in this laboratory for cutting frozen plant material on the rotary microtome¹ has been found useful in the cutting of paraffin sections also, especially when a modification of the familiar safety-razor blade holder is employed. For the control of the temperature of the knife in cutting paraffin sections LAND² describes and figures a trough of metal provided with a nipple at either end in which the microtome knife is placed and through which water of the desired temperature is made to flow. The use of a Gillette safety-razor blade in a proper holder is apparently becoming rather general among plant cytologists. Certainly the use of such blades with classes in microtechnique is a great saving of time and energy as compared with attempts either to allow the students to sharpen microtome knives themselves or to provide them with such knives properly sharpened. In addition, with such a class, consistently successful results in cutting can only be obtained if it is possible to regulate the temperature of the knife and, in some cases, of the material also. Even at $10\ \mu$ with refractory material in 52° paraffin it is difficult for most students always to obtain a smooth ribbon at ordinary laboratory temperatures unless the knife is kept cool. To meet this latter situation a simple modification of the usual type of safety-razor blade holder has been employed with such success in this laboratory that a brief description of it seems desirable. We have found the original holder made by STRICKLER³ the most desirable type of a number at present on the market. To such a holder a small brass tube is attached, as shown in fig. 1. This tube has a bore of 4 mm. and is soldered to the outer leaf of the holder, thus in no way interfering with the separation of the leaves when the safety-razor blade is to be inserted. The tube is extended approximately 6 mm. beyond the holder proper at either end to allow the attaching of small rubber tubes.

¹ GARDNER, N. L., A freezing device for the rotary microtome. *BOT. GAZ.* 63: 236-238. 1917.

² LAND, W. J. G., A method of controlling the temperature of the paraffin block and microtome knife. *BOT. GAZ.* 57:520-523. 1914.

³ CHAMBERLAIN, C. J., *Methods in plant histology.* Chicago. 1915 (p. 9).

For class use, where very thin sections are not ordinarily required, we have found that the temperature of the knife in such a holder is sufficiently low if tap water is allowed to flow through the tube. A very short time is required for the temperature of the water to be communicated to the knife. A cooling cell such as LAND'S or GARDNER'S also regulated with tap water may be employed in addition, but its use

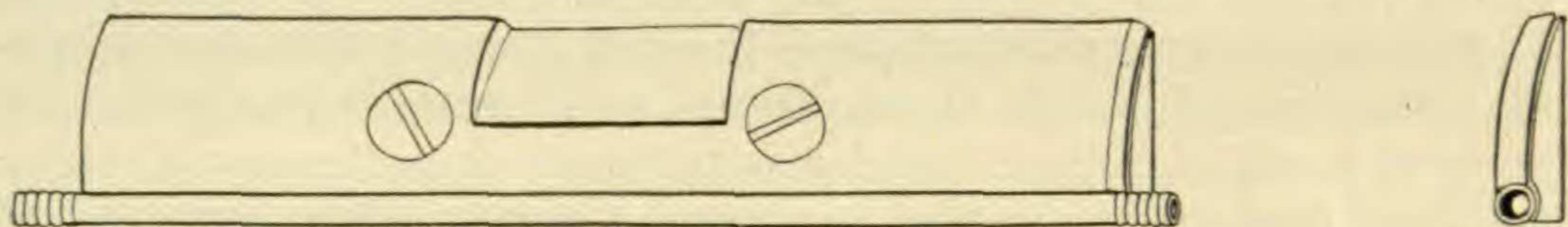


FIG. 1

in most cases is superfluous. Where sections from soft or medium paraffin under 5μ are required, the modified safety-razor blade holder and the cooling cell are attached to GARDNER'S apparatus with the buckets filled with ice water. Under such conditions sections 2μ thick have been cut very successfully from a paraffin melting at 53° .—T. H. GOODSPEED, *University of California*.

POLLINATION OF ASCLEPIAS CRYPTOCERAS

Being interested in the mode of pollination of *Asclepias*, I should like to know how PAYSON explains the mode of pollination given in BOT. GAZ. 61:73. 1916. By a bumblebee's foot I understand the end of the last tarsal joint with two claws and a pulvillus. Does the corpusculum become attached to the foot or to one of these appendages? If the foot is wedged between the anther wings, how does the bee get away without tearing the anther wings, and how does it, or any part of it, enter the cleft of the corpusculum? In pollination, if the bee pulls out its foot with attached corpusculum, what keeps the pollinium from coming out with it? My view of the pollination of *Asclepias*, published in BOT. GAZ. 11:262-269. 1886, and 20:110. 1895, is that a single claw, hair, pulvillus, tibial spur, or stump of a retinaculum is caught in the slit between the anther wings and is guided by them into the cleft of the corpusculum. The corpusculum keeps this appendage from again entering the slit. Only one pollinium is caught between the wings and guided into the stigmatic chamber, where it is held so firmly that a pull breaks it loose from the retinaculum. Probably *Asclepias cryptoceras* is a bumblebee flower, but I would not accept the view that it is not occasionally pollinated by other long-tongued bees, or butterflies, unless it is shown that these insects do not have proboscides long enough to reach the nectar.—CHARLES ROBERTSON, *Carlinville, Ill.*